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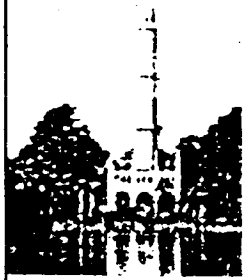

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The susceptibility of pepper lines and varieties to *Meloidogyne incognita* (Kofoid et White, 1919) Chitwood, 1949

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In Hungary sweet pepper (*Capsicum annuum* L.) is among the most important vegetable species, the area of greenhouses and plastic houses used for its growing being approx. 2300 ha. *Meloidogyne incognita* is a major pest in pepper growing areas. Above ground symptoms of pest damage are poor growth, wilting, and reduced yield, whereas below ground symptoms are the root galls. Hungarian growers have been taking different – mainly chemical (Vydate 10G, Basamid G, Metabrom 980) – control measures against the pest, preplant soil treatment being the principal way of control. However, due to the phase-out of methyl bromide from the Hungarian market in 2005, alternative control methods should be considered.

Grafting or the use of resistant cultivars offer highly efficient and environmentally benign ways of control. Resistance to root-knot nematodes have been reported in numerous *Solanaceae*-species. Pepper breeders have made sufficient efforts to develop pepper varieties with resistance to different *Meloidogyne* species all over the world. As early as 1948, Martin selected Cayenne pepper types for root-knot resistance (species was not identified), and as a result the resistant 'Carolina Hot' was released. In 1956, Hare tested a collection of 162 varieties and strains of *C. frutescens* against *M. incognita acrita* and classified four varieties as highly resistant. Hare (1957) suggested that the symbol *N* be used to designate the dominant gene found to control resistance against *M. incognita acrita* in *C. frutescens* 'Santanka xS'.

Hendy et al. (1983) found two *C. annuum* lines, PM217 and PM687, which were resistant to a wide range of *Meloidogyne* populations (*M. incognita, M. arenaria* and *M. javanica*) and five main dominant genes were identified (Hendy et al., 1985).

Di Vito et al. (1992) identified resistance to RKN (*M. arenaria, M. incognita* és *M. javanica*) in lines of *Capsicum chacoense* Hunz., *C. chinense* Jacq., and *C. frutescens*. Fery and Thies (1996) examined 59 lines of *C. chinense* and found 3 with resistance to *M. incognita*. In 1997, two bell pepper cultivars, Charleston Belle and Carolina Wonder, with resistance to *M. incognita* were released in the U.S.

In Hungary, Amin (1994) tested 44 lines and varieties of *C. annuum* and found 8 resistant to *M. incognita*. Budai et al. (1997) examined 10 hot pepper varieties and 5 sweet pepper varieties to *M. incognita* and found resistance in two hot pepper varieties. However, at present there are no commercial sweet pepper varieties with resistance to *M. incognita* in Hungary. The objective of our study was to test pepper lines and varieties for their reaction to *M. incognita* and identify potentially useful germplasm for use in breeding programs to develop commercial sweet pepper cultivars.